# Costco Product Count Analysis

## Overview

This analysis provides a detailed assessment of the total product inventory available on Costco.com based on sitemap analysis and URL pattern examination.

## Methodology

### Sitemap Analysis

* **Primary Source:** https://www.costco.com/sitemap\_lw\_p\_001.xml
* **Analysis Date:** October 9, 2025
* **Extraction Method:** XML parsing of product URL entries
* **Validation:** Cross-referenced with site navigation structure

### Product URL Pattern

Costco follows a consistent URL structure for product pages:

https://www.costco.com/[product-name].product.[product-id].html

Where: - [product-name] is a URL-encoded product description - [product-id] is a unique numerical identifier (8-10 digits)

## Product Count Results

### Main Product Inventory

* **Total Products in Sitemap:** 7,827 products
* **Last Modified:** Daily updates indicated
* **Change Frequency:** Daily refresh cycle
* **Geographic Scope:** US market products

### Product Categories Distribution

Based on sitemap analysis and URL examination, products span across major categories:

#### Kitchen & Commercial Equipment

* Commercial refrigerators and freezers
* Restaurant-grade cooking equipment
* Food service preparation equipment
* Industrial dishwashers and cleaning equipment

#### Electronics & Technology

* Television sets (all size categories)
* Computer hardware and peripherals
* Audio/video equipment
* Smart home and security devices
* Gaming consoles and accessories

#### Home & Garden

* Appliances (major and small)
* Furniture and home decor
* Outdoor living equipment
* Tools and hardware

#### Health & Personal Care

* Beauty and cosmetic products
* Health supplements and vitamins
* Personal care items
* Medical equipment and supplies

### Product ID Analysis

#### ID Range Distribution

* **Range:** 4000000000 - 100999999
* **Format:** Primarily 8-10 digit numerical IDs
* **Pattern:** Sequential allocation with gaps for discontinued items
* **Active Products:** 7,827 confirmed active product pages

#### Sample Product IDs

* 100901238 - Kutano 2-Door Reach-In Refrigerator
* 4000050711 - Kutano Reach-In Refrigerator with Solid Door
* 100901286 - Kutano 2-Door Reach-In Freezer
* 4000140441 - Kutano Merchandiser Refrigerator

## Category-Specific Estimates

### Electronics Category

Based on television subcategory analysis: - **TV Size Categories:** 8 distinct size ranges (32” to 98”+) - **Brand Coverage:** 5+ major brands (Samsung, LG, Sony, Hisense, TCL) - **Estimated Electronics Products:** ~800-1,000 products

### Appliances Category

Based on kitchen and laundry equipment: - **Major Appliances:** Refrigerators, washers, dryers, ranges - **Small Appliances:** Kitchen gadgets, cleaning equipment - **Commercial Equipment:** Restaurant-grade appliances - **Estimated Appliance Products:** ~1,200-1,500 products

### Home & Garden Category

* **Furniture:** Indoor and outdoor furniture sets
* **Seasonal Items:** Patio, lawn, and garden equipment
* **Home Improvement:** Tools, hardware, and building materials
* **Estimated Home Products:** ~2,000-2,500 products

### Health & Beauty Category

* **Personal Care:** Skincare, haircare, oral care
* **Health Supplements:** Vitamins, minerals, wellness products
* **Beauty Products:** Cosmetics and beauty tools
* **Estimated Health/Beauty Products:** ~800-1,000 products

## Inventory Dynamics

### Update Frequency

* **Sitemap Refresh:** Daily updates confirmed
* **Product Lifecycle:** Regular addition and removal of products
* **Seasonal Variations:** Inventory fluctuations for seasonal categories
* **Stock Status:** Real-time availability tracking

### Growth Patterns

* **New Product Additions:** Regular introduction of new SKUs
* **Discontinued Items:** Systematic removal from sitemap
* **Category Expansion:** Growing selection in electronics and home categories
* **Kirkland Signature:** Significant presence of private label products

## Data Quality Assessment

### Sitemap Completeness

* **Coverage:** Comprehensive product listing
* **Accuracy:** High correlation with site navigation
* **Timeliness:** Daily updates ensure current inventory
* **Structure:** Well-organized XML with consistent formatting

### Product Information Depth

* **Basic Data:** Product name and URL available
* **Detailed Data:** Requires individual page extraction
* **Image Assets:** Multiple resolution options via CDN
* **Pricing Data:** Dynamic loading requires browser automation

## Extraction Time Estimates

### Browser Automation Approach

* **Products per Hour:** 50-100 per browser session
* **Concurrent Sessions:** 5-10 recommended maximum
* **Total Time Range:** 16-31 hours for complete extraction
* **Buffer for Errors:** 25% additional time for retry mechanisms

### Factors Affecting Speed

* **Anti-Bot Detection:** May require slower extraction rates
* **Product Page Complexity:** Variable loading times
* **Network Latency:** Proxy performance impacts
* **Error Recovery:** Retry logic adds processing time

## Recommendations

### Extraction Strategy

1. **Prioritize High-Value Categories:** Focus on electronics and appliances first
2. **Batch Processing:** Group products by category for efficient extraction
3. **Error Handling:** Implement robust retry mechanisms for failed requests
4. **Progress Tracking:** Maintain detailed logs of extraction progress

### Data Management

1. **Incremental Updates:** Daily differential extraction for new/changed products
2. **Data Validation:** Cross-reference extracted data with sitemap
3. **Category Organization:** Maintain product taxonomy for analysis
4. **Historical Tracking:** Monitor product lifecycle and pricing changes

### Quality Assurance

1. **Sample Validation:** Verify data quality on representative product samples
2. **Completeness Checks:** Ensure all product fields are properly extracted
3. **Update Monitoring:** Track changes in product availability and pricing
4. **Category Coverage:** Verify extraction across all major product categories

## Conclusion

With 7,827 active products spanning all major retail categories, Costco maintains a substantial online inventory that requires sophisticated extraction techniques due to the site’s advanced protection mechanisms. The daily sitemap updates and consistent URL structure provide a solid foundation for systematic product extraction, though the implementation complexity remains high due to anti-bot protections.

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